

State of Iowa - Return on Investment Program / IT Project Evaluation**SECTION 1: PROPOSAL**

Tracking Number (For Project Office Use)

004

Project Name: Enterprise Data Warehouse Date: 9-20-2000

Agency Point of Contact for Project: Linda Plazak

Agency Point of Contact Phone Number / E-mail: 281-6778 linda.plazak@its.state.ia.us

Executive Sponsor (Agency Director or Designee) Signature: Rich Varn

Is this project necessary for compliance with a Federal standard, initiative, or statute? (If "Yes," cite specific requirement, attach copy of requirement, and explain in Proposal Summary) XX No

Is this project required by State statute? (If "Yes," explain in Proposal Summary) XX Yes
Senate File 2433

Does this project meet a health, safety or security requirement? (If "Yes," explain in Proposal Summary) XX Yes

Is this project necessary for compliance with an enterprise technology standard? (If "Yes," explain in Proposal Summary) XX Yes

Does this project contribute to meeting a strategic goal of government? (If "Yes," explain in Proposal Summary) XX Yes

Is this a "research and development" project? (If "Yes," explain in Proposal Summary) XX No

PROPOSAL SUMMARY:

In written detail, explain why the project is being undertaken and the results that are expected. This includes, but is not limited to, the following:

1. A pre-project (before implementation) and a post-project (after implementation) description of the system or process that will be impacted.

Pre-Project: A limited amount of readily available information to describe adult and juvenile charges, outcomes, and trends.

Post-Project: The overall mission of the Enterprise Data Warehouse is to provide the judicial, legislative and executive branches of State government with improved statistical and decision support information pertaining to justice system activities from a central location. The Enterprise Data Warehouse's current priority is to establish a centralized database containing selected statewide Iowa State Court Information System (ICIS) data, Human Services child welfare data and Revenue and

Finance tax gap data. Historically, no readily available or efficient method to access aggregated information on a statewide basis has existed in Iowa. Six agencies have joined together to form a planning group to collectively plan for and guide the development of the Enterprise Data Warehouse. These agencies have identified key issues or problems that could be resolved through the development of an Enterprise Data Warehouse.

Assessment and planning for the Enterprise Data Warehouse has already been accomplished, as well as a physical design for Phase One. During 1999 and 2000, five prototypes and applications were developed. The Justice Data Warehouse application was completed (with previously awarded state and federal funds). A prototype for Human Services Temporary Assistance for Needy Families and Child Welfare data has been completed. DHS is now loading the actual data. A prototype for Revenue and Finance Tax Gap audit and collection was created and the application is now operational. Department of Personnel Benefit information application has been completed. Information for the Department of Corrections is now being loaded into the Justice Data Warehouse model.

A lease agreement was approved for the computer equipment to be purchased, installed, and loaded with prototype data during FY2000. During FY2001 millions of records will be loaded to the data warehouse.

The project goals are:

- To provide a central repository for selected statewide data, focusing on Iowa Court Information System ICIS data and Human Services data; additionally tax gap data will be included.
- To improve the ability of agencies to obtain and use statewide data to meet their stated needs.
- To improve management of and planning for the various programs and services managed by the state agencies.

The Enterprise Data Warehouse Project supports the goals of the Governor, the Judicial and Legislative branches of government by providing:

- The means to make data-based decisions.
- Utilizing an enterprise approach to hardware and software procurement for a data warehouse standard platform.
- Enhanced collaboration among agencies, through the sharing of information.
- To utilize advanced technologies that maximize efficiency, support program and policy evaluations and promote effective and equitable justice, services, and public participation.
- Improvement of the governments ability to share information electronically, by providing for a centralized repository for data, and by establishing the capacity to link with other system information sources.
- Support the development of innovative approaches to program evaluation and outcomes.
- To help facilitate and improve the development, collection and use of data and other information of value for state and local program planning.

Planning is now occurring to expand the Justice Data Warehouse to include data from other criminal justice information systems (e.g., Department of Corrections' offender data). Linking and sharing justice data among agencies at a statewide level will better serve the public. Some examples include:

- Probation officers better able to monitor offenders' restitution payments to the court
- Community-based corrections improving knowledge about offender re-arrests or citations, within their supervising county OR statewide.

In the future the Enterprise Data Warehouse will be in a position to share longitudinal information from the Department of Human Services and the Justice agencies who are also adding data to the enterprise data warehouse platform.

2. **A summary of the extent to which the project provides tangible and intangible benefits to either Iowa citizens or to State government. Included would be such items as qualifying for additional matching funds, improving the quality of life, reducing the government hassle factor, providing enhanced services, improving work processes, complying with enterprise technology standards, meeting a strategic goal, avoiding the loss of matching funds, avoiding program penalties/sanctions or interest charges, avoiding risks to health/security/safety, complying with federal or state laws, etc.**

- *Note: It is our understanding that, without the requested funds for the Enterprise Data Warehouse, the ability of the State to make lease purchase payments on the enterprise data warehousing platform would be in jeopardy. There are therefore substantial risks to several state department initiative if funds are not allocated.*
- Access to up-to-date information. Currently, readily available information on criminal charges, convictions and sentences may be up to two years old in some cases.
- Access to more complete information. In the recent tragedy of Shelby Duis, information that could have saved her life was stored in multiple places and no one person had access to all of the information needed to make a life-saving decision.
- Expanded capacity of the state to conduct ad hoc queries of Iowa Court Information System (ICIS) data, Child Welfare data and Tax Gap data. Currently, all such queries are conducted by the staff on a time-available basis via separate analyses of the various county-level systems. Such expanded capacity will facilitate analyses that may not otherwise be conducted (such as juvenile and adult recidivism studies).
- Improved projections of indigent defense needs through access to more detailed information on projected charges, case processing times and cost per type of case.
- Improved correctional impact statements through use of current and accurate data as well as detailed information on simple misdemeanors, scheduled violations and case processing times.
- Improved planning for the justice, human services and revenue systems, including information to support program changes and improved allocation of resources.
- Future opportunity to comprehensively link information systems in order to optimize information sharing and data completeness and quality for management and planning purposes.

3. **A summary that identifies the project stakeholders and how they are impacted by the project.**

Response:

The project stakeholders are:

- Legislature (including, but not limited to, the Legislative Fiscal Bureau and Sentencing Commission). They have found information from the prototype Justice Data Warehouse to be useful in completing correctional impact statements that estimate the potential costs to the state of making changes in Iowa's sentencing laws and practices. It is also expected that the Justice Data Warehouse may assist in improvement of projections of indigent defense costs, and correctional populations. Information from Human Services child

welfare will enable staff to quickly make determinations and decisions that could save lives.

- Various executive branch agencies (including, but not limited to, the Department of Management, The Department of Public Health, the Department of Inspections and Appeals, the Department of Public Safety, the Department of Corrections, Human Services, Revenue and Finance). These agencies have documented many reasons why an Enterprise Data Warehouse may improve decision-making, availability of information and information sharing to improve their services to the public.
- Various other entities and individuals who contact the Division of Criminal and Juvenile Justice Planning for information (including, but not limited to, the U.S. Department of Justice's National Judicial Reporting Program, county attorneys, local governments, and private organizations). Human Services community providers, non-profit partners, local health care workers and educators are joining empowerment boards to make better community planning decisions.

SECTION 2: PROJECT PLAN

Individual project plans will vary depending upon the size and complexity of the project. A project plan includes the following information:

1. Agency Information

Project Executive Sponsor Responsibilities: Identify, in Section I, the executive who is the sponsor of the project. The sponsor must have the authority to ensure that adequate resources are available for the entire project, that there is commitment and support for the project, and that the organization will achieve successful project implementation.

Response:

This is an enterprise project sponsored by Information Technology Department to support and maintain an enterprise data warehouse platform. Criminal Juvenile Justice Planning (CJJP) Division of Department of Human Rights, Department of Human Services, Department of Revenue and Finance, Department of Corrections, Department of Personnel, and the Iowa Judicial Courts. Linda Plazak is the Enterprise Data Warehouse Coordinator. Rich Varn is the Executive Sponsor. Each participating agency has identified a coordinator and sponsor.

Organization Skills: Identify the skills that are necessary for successful project implementation. Identify which of these skills are available within the agency and the source(s) and acquisition plan for the skills that are lacking.

Response:

IT Project Management - skills available within ITD.

Database Management - skills available within ITD.

Data Modeling - skills available from vendor partner (Bull Information Systems)

Data Extraction and Load - skills available within ITD and the vendor partner.

Data Analysis - skills available within each partner agency.
Platform Management - skills shared within ITD and vendor partner.

2. Project Information

Mission, Goals, Objectives: The project plan should clearly demonstrate that the project has developed from an idea to a detailed plan of action. The project plan must link the project to an agency's mission, goals, and objectives and define project objectives and how they will be reached. The project plan should include the following:

A. **Expectations:** A description of the purpose or reason that the effort is being undertaken and the results that are anticipated.

Response:

Mission. The overall mission of the Enterprise Data Warehouse Project is to provide the judicial, legislative and executive branches with selected statistical and decision support information pertaining to justice, human service and tax system activities from a central location. Information Technology Department is charged with supporting and managing the technical aspects of the data warehouse for the enterprise partner agencies.

The expectation is that the data warehouse platform would be available to query and report on large amounts of data that will cross agencies and reside in one location. Data will be formatted and stored in a standard based decision support environment. Standard query and reporting tools will be supported by ITD and utilized by the partner agencies. Data will be managed, backed-up, transformed, refreshed, appended and loaded according to standards.

The Enterprise Data Warehouse Project is expected to address the following:

- Projecting indigent defense costs for budgeting purposes (juvenile and criminal)
- Improving the completeness and accuracy of correctional impact statements ordered by the legislature (for bills affecting both the juvenile and criminal systems)
- Improving monitoring and implementation of the sex offender registry
- Improving identification and monitoring of domestic abuse restraining orders and violations of such orders
- Improving ability to track child abuse reports
- Enhance collaboration among criminal justice and human service agencies, through the sharing of information.
- Improve the criminal justice system's ability to share information electronically, by providing for a centralized repository for Iowa Court Information System (ICIS) data, and by establishing the capacity to link with other justice system information sources.
- Support the development of innovative approaches to research and evaluation, by facilitating access to system information.
- The Justice Data Warehouse in its first phase provides a central repository of key criminal and juvenile justice information from the Iowa Court Information System. Data from all 99 counties will be available. The impact of having this information is listed in the following items:
- Ensuring completeness of criminal and abuse history records

- Law enforcement and human services better informed on domestic abuse restraining orders
- Improving assessment of the potential correctional impact of proposed legislation
- Improving accuracy of projections: indigent defense costs; prison population
- To establish integrated justice system information reporting capabilities and procedures that provide practitioners, officials and policy makers with the information they need to carry out their responsibilities and to monitor and evaluate justice system policies and programs.
- To utilize advanced technologies that maximize efficiency, support program and policy evaluations and promote effective and equitable justice, services, and public participation.
- To help facilitate and improve the development, collection and use of data and other information of value for state and local program planning.
- To enhance our ability to identify, study and provide information on criminal and juvenile justice issues.

B. Measures: A description of the set of beliefs, tradeoffs and philosophies that govern the results of the project and their attainment. How is the project to be judged or valued? What criteria will be used to determine if the project is successful? What happens if the project fails?

Response:

Codes: A=new capacity; B=will be able to do with more complete data; C=will be able to do faster or with more recent data.

1. Ability to calculate case processing times (by charge and offense class) (A). This would inform the development of projections of indigent defense costs and prison population projections.
2. Ability to calculate recidivism rates by offender characteristics and charge (A). This would inform studies into “what works” in the way of effective responses to crime by the justice system.
3. Ability to identify re-offending incidents for a juvenile (A). By increasing our ability to respond effectively to the juvenile offender, we may experience less adult crime and its associated costs to victims and society.
4. Ability to compile re-offending juvenile incidents by charge and type of program/service (A). By increasing our ability to respond effectively to the juvenile offender, we may experience less adult crime and its associated costs to victims and society.
5. Ability to identify and quantify arrest warrants, mittimus, juvenile pickups (order that were issued and canceled) (A). This may lead to improved ability of the justice system to respond to crime and offenders’ behaviors.
6. Ability to describe victim restitution amounts imposed and paid by case, case type and payor (A). We can improve our ability to monitor efforts to restore the victim and hold offenders accountable for their actions.
7. Ability to describe imposed and collected fines by year and by offense (for single charge cases) (A). Improved knowledge of trends leads to an improved ability of the state to anticipate the future needs of the justice system, and improve planning and improvement efforts.
8. Ability to compile offense-based and offender-based charge, conviction and sentencing statistics (A, B, C). Important to projections and assessment of correctional impact of proposed changes in sentencing laws and practices.

9. Ability to calculate incarceration rates by charge/type (both offense-based and offender-based) (B, C). Important to projections and assessment of correctional impact of proposed changes in sentencing laws and practices.
10. Ability to describe charge reductions and amendments by original charge (C). Important to projections and assessment of correctional impact of proposed changes in sentencing laws and practices.
11. Ability to assess the potential correctional impact of *any* penalty change for an existing crime (B, C). Without the justice data warehouse, some law changes may be (and have been) enacted without full knowledge of the potential costs to the state, and impact on court and other justice system resources.
12. Ability to compile information by offender characteristics (race, sex, age, etc.) (B, C). This improves our ability to assess the fair and equitable treatment of offenders within the justice system, and discover “what works” for our different offender populations.
13. Ability to describe juveniles waived to adult court (B, C). There is currently limited information on this topic of interest. Information in the justice data warehouse may improve assessment of the results of policy changes implemented during recent years.

Implications of Not Funding

- ITS will be unable to make the next lease payment on the Teradata computer being used for the warehouse. We will therefore lose the Teradata computer. **This would adversely affect the Justice Data Warehouse Project, the Department of Revenue and Finance application, the Department of Human Services Child Welfare application, the Department of Personnel, and the Department of Corrections. Collectively, a significant amount of funds expended in assessment, design and prototype development are at stake.**
- The State will lose its original investment. This includes the \$500,000 appropriated last year for the Justice Data Warehouse, and \$313,865 in state and federal funds expended in assessment, design and prototype development. Additionally, this includes the \$680,000 spent by DHS to assess and design their application.
- There will be no statewide repository of selected Iowa Court Information System (ICIS) data. There will be no Justice Data Warehouse. There will be no Human Services Child Welfare Data Warehouse.
- The State will lose the opportunity to begin linking information systems to improve information sharing among agencies and better serve the public.

C. **Environment:** Who will provide input (e.g., businesses, other agencies, citizens) into the development of the solution? Are others creating similar or related projects? Are there cooperation opportunities?

Response:

As an Enterprise project, the Enterprise Data Warehouse has involved numerous agencies and stakeholders in its design and implementation. The Judicial and Executive Branches of government have collaborated and the Iowa Court Information System is the main data source

for the Justice Warehouse. Human Services is consolidating data from various legacy systems. The DRF is utilizing data from over 70 different systems.

The Enterprise data warehouse platform and services were leased in December 1999 using CJPJ FY00 appropriated funds for the down payment. The Department of Human Services and the Department of Revenue and Finance have signed a 28E agreement with CJPJ and ITD to support and utilize the Enterprise data warehouse platform. Initially all three entities were going to purchase and implement their own data warehouse solutions. As a result of collaboration and cooperation the agencies decided to form a partnership to purchase and utilize an Enterprise platform solution. This is intended to minimize support and training resources required to maintain an extra large data warehouse.

D. Project Management and Risk Mitigation: A description of how you plan to manage the project budget, project scope, vendors, contracts and business process change (if applicable). Describe how you plan to mitigate project risk.

Ron Strother and Russ Rozinek from ITD are responsible for data base management, software management, platform maintenance and capacity planning of the enterprise data warehouse. Bull Information Systems is the primary vendor for the platform. CJPJ has contracted with Bull Information Systems to define and implement the Justice portion of the Enterprise data warehouse. Bull Information Systems has also been awarded work on the Department of Corrections application. All work by Bull has been completed on time and within budget. Raytheon is the vendor selected by DHS and all work has been completed on time and within budget. NCR is the vendor selected by DRF. To date, all work has been completed on time and within budget. Linda Plazak from ITD provides project oversight and coordination.

The goal of the partnership was for ITD to secure appropriation to cover the ongoing cost of expanding and maintaining an Enterprise data warehouse platform architecture. Each agency would seek appropriation to expand the application development required for their specific agency. An Enterprise architecture is being developed by Ron Strother's team at ITD so agency applications can easily "plug" into an Enterprise data model structure. Each agency has secured contracted services of vendor partners to assess and develop their applications. Each partner agency is responsible for their own vendor and project management. The ITD Enterprise Data Warehouse Coordinator meets with all partner agencies and their vendors every two weeks to discuss issues and concerns. It is the Coordinator's responsibility to coordinate the development of standards and policies that affect the successful expansion of the data warehouse.

E. Security / Data Integrity / Data Accuracy / Information Privacy: A description of the security requirements of the project? How will these requirements be integrated into the project and tested. What measures will be taken to insure data integrity, data accuracy and information privacy?

Response: Security

At the request of the ITD Enterprise Data Warehouse Coordinator, the ITD Security Officer developed a comprehensive Enterprise Data Warehouse Security Policy. This policy was created with input from the ITD Enterprise Data Warehouse Coordinator, partner agencies, vendor partners, and industry sources.

Response: Data Integrity

Timeliness and authenticity of the data is the responsibility of the owner agency. Use of a metadata repository that is accessible to users will identify the definition, format, frequency of change, etc. of each agency's data.

Response: Data Accuracy

The success of the enterprise data warehouse is dependent on the quality of data that is loaded. Each agency is responsible for identifying and cleansing their data sources. Use of a metadata repository that is accessible to users will identify the definition, format, frequency of change, etc. of each agency's data.

Response: Privacy

The owner of the data controls the data. Access rights will only be granted to individuals identified by the owner of the data. Rights will be limited to view, update, read, write, delete. If a person only has access to 20 of the 100 data elements, the user will only "see" 20 elements. They will not even know the other 80 exist. Every possible method will be deployed to provide confidentiality.

3. Current Technology Environment (Describe the following):

A. Software (Client Side / Server Side / Midrange / Mainframe)

- Application software
- Operating system software
- Interfaces to other systems: Identify important or major interfaces to internal and external systems

Response:

Teradata Relational Database is the enterprise data warehouse application software. This database will interface to all of the state's mainframe computers and partner agency servers.

B. Hardware (Client Side / Server Side / Mid-range / Mainframe):

- Platform, operating system, storage and physical environmental requirements.
- Connectivity and Bandwidth: If applicable, describe logical and physical connectivity.
- Interfaces to other systems: Identify important or major interfaces to internal and external systems.

Response:

The NCR WorldMark 4800 is the hardware platform.

4. Proposed Environment (Describe the following):

A. Software (Client Side / Server side / Mid-range / Mainframe)

- Application software.
 - Operating system software.
 - Interfaces to other systems: Identify important or major interfaces to internal and external systems.
 - General parameters if specific parameters are unknown or to be determined.
- B. Hardware (Client Side / Server Side / Mid-range / Mainframe)
- Platform, operating system, storage and physical environmental requirements.
 - Connectivity and Bandwidth: If applicable, describe logical and physical connectivity.
 - Interfaces to other systems: Identify important or major interfaces to internal and external systems.
 - General parameters if specific parameters are unknown or to be determined.

Response: Same as current environment.

Data Elements: If the project creates a new database the project plan should include the specific software involved and a general description of the data elements.

Response:

The Justice Data Warehouse is populated with criminal history, charge, sentence, disposition data from the Iowa Courts Information System. The Department of Human Services Data Warehouse application is populated with data from the Child Welfare and Temporary Assistance for Needy Families systems. The Department of Revenue and Finance Tax Gap Compliance Data Warehouse application is populated with data consisting of different tax types and cross references data from numerous systems provided by the DOT, DHS, IRS, etc.

Project Schedule: A schedule that includes: time lines, resources, tasks, checkpoints, deliverables and responsible parties.

Response:

Division of Operations: Russ Rozinek
 Hardware upgrade and installation
 Software upgrade and installation
 Capacity planning
 Security maintenance

Division of Customer Support: Ron Strother
 Usage reporting
 Data base analysis

The above tasks were started in FY01 and are ongoing in nature.

SECTION 3: Return On Investment (ROI) Financial Analysis

Project Budget FY02:

Provide the estimated project cost by expense category.

Personnel	\$ 162,637	
Software	\$ 0	
Hardware.....	\$ 2097300	
Training	\$ 8,000	
Facilities	\$ 0	
Professional Services.....	\$ 155110	
Supplies	\$ 2,000	
Other(Specify).....	\$ 89,446	(mainframe costs+telecommunications)
Total.....	<u>\$2,514,493</u>	

Project Funding:

Provide the estimated project cost by funding source.

State Funds.....	\$ 2,514,493	100	% of total cost
Federal Funds	\$		% of total cost
Local Gov. Funds	\$		% of total cost
Private Funds	\$		% of total cost
Other Funds (Specify)	\$		% of total cost
Total Cost:	\$		% of total cost

How much of the cost would be incurred by your agency from normal operating budgets (staff, equipment, etc.)?

Provide the estimated project cost by fiscal year: FY01

FY02

FY03

How much of the cost would be paid by "requested IT project funding"? ..

Identify, list, and quantify all additional annual maintenance expenses related to the project. N/A

Identify, list and quantify any other future additional expenses related to the project. N/A

ROI Financial Worksheet Directions (Attach Written Detail as Requested):

Annual Pre-Project Cost -- Quantify, in written detail, all actual State government direct and indirect costs (personnel, support, equipment, etc.) associated with the activity, system or process prior to project implementation. This section should be completed only if State government costs are expected to be reduced as a result of project implementation.

Response: Much of the information that will be made available for decision support through the Enterprise Data Warehouse was not previously readily available, nor was there a capacity to link these data on a statewide basis with the other information system databases.

Annual Post-Project Cost -- Quantify, in written detail, all estimated State government direct and indirect costs associated with activity, system or process after project implementation. This section should be completed only if State government costs are expected to be reduced as a result of project implementation.

Response: It is anticipated that there will be an improvement in the completeness and accuracy of records; an improved ability to anticipate future program costs; improved projections and analysis due to knowledge of up-to-the-month trends in abuse and criminal case filings and incarceration rates; the development of better responses to crime and criminal behavior; the passage of improved sentencing laws; improved allocation of resources for the human services and justice system; and decision support to ensure fair and equitable treatment of clients. It is anticipated that tax collection revenues will improve annually.

State Government Benefit -- Subtract the total "Annual Post-Project Cost" from the total "Annual Pre-Project Cost." This section should be completed only if State government costs are expected to be reduced as a result of project implementation.

Response: n/a

Citizen Benefit -- Quantify, in written detail, the estimated annual value of the project to Iowa citizens. This includes the "hard cost" value of avoiding expenses (hidden taxes) related to conducting business with State government.

Response: Based on state crime statistics in 1997, Iowans lost an estimated \$77 million in property from burglaries, thefts and robberies. 528 Iowans suffered forcible rape. 5,573 Iowans were the victims of aggravated assault. 6,477 Iowans were victim of domestic violence. 59 Iowans were murdered.

According to national studies a human life is valued at \$6.1 million. Last year Iowans spent \$24 million to house 4,927 people in community based facilities. \$57 million was spent on supervising or housing 38,090 people in community based programs. To keep an inmate incarcerated in a correctional institution costs Iowans approximately \$54.00 per day. Currently 7,706 inmates are incarcerated. This averages to an annual cost of approximately \$15 million. It cost Iowans \$35 million to build a new prison for 400 inmates in Fort Dodge.

The Department of Corrections estimates that if current justice system trends, policies and practices continue, prison population growth is estimated to increase by 60% over the next ten years. This would require building three additional facilities at a potential cost to Iowans at \$120 million.

Utilizing data warehouse technology to conduct program evaluation and target specific services and programs towards high-risk offenders maximizes available treatment resources and the public's safety. By focusing on crime prevention and offender treatment outcomes

Iowa could reduce incarceration and save millions of dollars over the next ten years. If the State of Iowa could reduce the number of violent offenders by 100, \$3.1 million annually in inmate housing costs would be saved. Reducing the number of violent offenders by 400 would save the cost of adding a new prison and save Iowans \$35 million.

National statistics indicate the following:

Of all crime, adult rape has the highest victim cost at \$127 billion per year, followed by assault at \$93 billion and murder at \$61 billion. Personal crime is estimated to cost \$105 billion annually in medical costs, lost earnings and public program costs. When pain, suffering and reduced quality of life are assessed, the costs of personal crime increases to an estimated \$450 billion annually. It is estimated that 10 to 20 percent of mental health care expenditures in the U.S. may be attributable to crime, primarily for victim treatment. Four out of five gunshot victims are on public assistance or uninsured, costing taxpayers an estimated \$4.5 billion a year. Violent crime causes 3% of U.S. medical spending and 14% of injury-related medical spending. Insurers pay \$45 billion annually due to crime.

The death of Shelby Duis clarifies the actual cost of not being able to consolidate information in a timely manner. She is dead and the cost of one human life is estimated to be worth \$6.1 million. Child abuse in a homicide accounted for the highest known percentage of any age group in Iowa...19% of all murders were deemed to be the final event of child abuse. A data warehouse can help identify potential or actual abuse situations and intervention can be accomplished.

Opportunity Value/Risk or Loss Avoidance Benefit -- Quantify, in written detail, the estimated annual benefit to Iowa citizens or to State government. This could include such items as qualifying for additional matching funds, avoiding the loss of matching funds, avoiding program penalties/sanctions or interest charges, avoiding risks to health/security/safety, avoiding the consequences of not complying with State or federal laws, providing enhanced services, avoiding the consequences of not complying with enterprise technology standards, etc.

Response: *The State of Iowa has signed a multi-year lease for the data warehouse platform and related services. Defaulting on this lease would jeopardize the State's credit rating.*

By putting justice and human service data in one place on one platform, analysis could be completed in a timely manner regarding charges, convictions, sentences, programs, providers, etc. Currently it takes two years to compile the necessary data. Expanded capacity to conduct studies on juvenile crime and recidivism can result in better treatment programs for youthful offenders. Thus preventing adult crime that is very costly to the taxpayers of Iowa in terms of dollars and potential suffering at the hand of a criminal. The state is able to make improved projections on indigent defense needs and has been able to improve correctional impact statements.

Other states have utilized data warehouse technology to realize some significant results which could be duplicated in Iowa. The following are examples from other states:

In Colorado adult criminal cases were being scheduled outside the 120 -150 day mandated provisions for speedy trials. Using the data warehouse to query and determine the cause of this scheduling problem, it was determined that after the disclosure/discovery process, defense attorney's were taking an average of 45 days to submit their certificates of readiness for trial. This was the major cause of the scheduling cases outside the speedy trial

window. Action was taken to remedy this flaw in the process and the net results were an 18% reduction in case backlog.

Defendants in custody awaiting trial were costing the counties in Michigan significant financial burden. Judges were concerned about the cost to the county and state for housing inmates awaiting trial. Reports from the data warehouse identified which defendants were in jail custody and reprioritized court dockets to reduce the time to trial, thus reducing the financial burden being incurred to house the inmates.

Utilizing a data warehouse model to identify and track high risk felons after release created an alternative to racial profiling. This in turn caused a reduction of civil suits against the state.

A data warehouse application was utilized to track incidence of crime via geocoding. By deploying resources to where crime was occurring instead of a shotgun approach to deployment where it might occur. Crime in New York City has been reduced by 37%. The same concept is used for traffic accidents and speeding. Traffic accidents and speeding violations have been reduced in New York thus saving lives.

In Iowa, Pre-Sentence Investigation (PSI) improve the decision making process of the Board of Parole in the sentencing of defendants and subsequent release of felons by gathering all the history factors from multiple sources within the criminal justice network thus and making appropriate decisions. By analyzing and maintaining incarceration of high risk offenders the public safety of Iowans has been improved.

Iowa also anticipates using the data warehouse to improve projections of indigent defense costs and correctional populations; provide information on fines collection rates and collection of restitution to victims; improve the assessment of the potential correctional impact of proposed legislation; and supporting a wide range of justice system planning and evaluation efforts.

Total Annual Project Benefit -- Add the values of all annual benefit categories.

Total Annual Project Cost -- Quantify the estimated annual new cost necessary to implement and maintain the project including consulting fees, equipment retirement, ongoing expenses (i.e. labor, etc.), other technology (hardware, software and development), and any other specifically identifiable project related expense. In general, to calculate the annual hardware cost, divide the hardware and associated costs by three (3), the useful life. In general, to calculate the annual software cost, divide the software and associated costs by four (4), the useful life. This may require assigning consulting fees to hardware cost or to software cost. A different useful life may be used if it can be documented.

Response:

Hardware.....	\$2,097,300/3 = \$699,100
Training	\$ 8,000/4 = \$ 2,000
Professional Services	\$ 155,110/4 = \$ 38,778
Supplies.....	\$ 2,000
Other	\$ 89,446

Annualized project cost \$993,961

Benefit / Cost Ratio – Divide the “Total Annual Project Benefit” by the “Total Annual Project Cost.” If the resulting figure is greater than one (1.00), then the annual project benefits exceed the annual project cost. If the resulting figure is less than one (1.00), then the annual project benefits are less than the annual project cost.

ROI -- Subtract the “Total Annual Project Cost” from the “Total Annual Project Benefit” and divide by the amount of the project funds requested.

RETURN ON INVESTMENT

Cost Avoidance Exhibit

BACKGROUND:

Initially the Departments of Human Services, Revenue and Finance and Human Rights each were planning on acquiring their own hardware and software data warehouse platform.

RATIONAL:

By collaboration and cooperation the three agencies decided to support Information Technology Department in leasing and implementing an enterprise data warehouse platform that all agencies in state government would utilize. Additionally, the Judicial Branch will also utilize this platform.

By utilizing the ability to analyze data across agencies, from multiple sources, the ability to make data driven program and service decisions will be greatly enhanced.

COST AVOIDANCE:

The cost to acquire the hardware and software for the enterprise platform over a period of three years is 3,162,167. If the agencies had been allowed to purchase individually their own platforms the cost over a three year period would have been \$9,985,690. (This figure has been adjusted according to the hardware and software each agency would need). The purchase of an enterprise data warehouse platform, instead of purchasing three different platforms as originally was intended, has created the ability to avoid paying duplicate equipment costs, resulting in a cost avoidance of \$6,823,523. over a three year period.

- The cost avoidance for **FY2002** is estimated to be **\$2,274,507** (one third of the \$6,823,523).

The support and training associated with one standard enterprise platform are lowered. Additionally, the ability to conduct longitudinal studies of individuals, programs and outcomes across agencies lines will enable decisions makers to vastly improve their access to critical information and data.

ROI Financial Worksheet

Annual Pre-Project Cost - How You Perform The Function(s) Now

FTE Cost (salary plus benefits):

Support Cost (i.e. office supplies, telephone, pagers, travel, etc.):

Other Cost (expense items other than FTEs & support costs, i.e. indirect costs if applicable, etc.):

A. Total Annual Pre-Project Cost:

Annual Post-Project Cost – How You Propose to Perform the Function(s)

FTE Cost:

Support Cost (i.e. office supplies, telephone, pagers, travel, etc.):

Other Cost (expense items other than FTEs & support costs, i.e. indirect costs if applicable, etc.):

B. Total Annual Post-Project Cost:

State Government Benefit (= A-B):

Annual Benefit Summary

State Government Benefit:

Citizen Benefit (including quantifiable “hidden taxes”):

Opportunity Value and Risk/Loss Avoidance Benefit:

C. Total Annual Project Benefit:

D. Total Annual Project Cost:

Benefit / Cost Ratio (C / D):

ROI (C – D / Project Funds Requested):

2,274,507 Cost avoidance

\$2,274,507

\$993,961 project cost plus annual maintenance

2.29

50.93%

☒ **Benefits Not Cost Related or Quantifiable (including non-quantifiable “hidden taxes”)**

Benefits Not Cost Related or Quantifiable -- List the project benefits and articulate, in written detail, why they (IT innovation, unique system application, utilization of new technology, hidden taxes, improving the quality of life, reducing the government hassle factor, meeting a strategic goal, etc.) are not cost related or quantifiable. Rate the importance of these benefits on a "1 – 10" basis, with "10" being of highest importance. Check the "Benefits Not Cost Related or Quantifiable" box in the applicable row.

Response:

10 - Failure to make payment on the State's lease agreement.

10 - Improving the safety of Iowans'.

10 - Ability to collect more taxes.

10 - Ability to evaluate programs and improve outcomes to lower recidivism rates and reduce prison capacity requirements.

10 - Participating in the enterprise data warehouse to increase information sharing across agencies and target services more effectively.

It is anticipated that there may be an improvement in the completeness and accuracy of criminal history records; an improved ability to anticipate future indigent defense costs; improved prison population projections due to knowledge of up-to-the-month trends in criminal case filings and incarceration rates; the development of better responses to crime and criminal behavior; the passage of improved sentencing laws; improved allocation of resources for the justice system; and decision support to ensure fair and equitable treatment of offenders.

The overall benefit of this project is related to the increasing demand for reliable information with which to describe and assess the operations, clientele, and practices of Iowa's justice system. It is believed that this initiative will result in many benefits stemming from informed decision-making, including decisions on policies affecting current and future system costs. We are in the process of defining specific potential cost savings and benefits and will be in a better position to calculate a return on investment by the end of the first quarter of FY01.